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**1** [Realizing OpenGL: two implementations of one architecture](#)

 Mark J. Kilgard  
 August 1997 **Proceedings of the ACM SIGGRAPH/EUROGRAPHICS workshop on Graphics hardware**

 Full text available: [pdf \(1.66 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** O2, OpenGL, graphics hardware architecture, infinite-reality

**2** [Light field rendering](#)

 Marc Levoy, Pat Hanrahan  
 August 1996 **Proceedings of the 23rd annual conference on Computer graphics and interactive techniques**

 Full text available: [pdf \(376.59 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** epipolar analysis, holographic stereogram, image-based rendering, light field, vector quantization

**3** [Ray tracing on programmable graphics hardware](#)

 Timothy J. Purcell, Ian Buck, William R. Mark, Pat Hanrahan  
 July 2002 **ACM Transactions on Graphics (TOG) , Proceedings of the 29th annual conference on Computer graphics and interactive techniques**, Volume 21 Issue 3

 Full text available: [pdf \(454.93 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


Recently a breakthrough has occurred in graphics hardware: fixed function pipelines have been replaced with programmable vertex and fragment processors. In the near future, the graphics pipeline is likely to evolve into a general programmable stream processor capable of more than simply feed-forward triangle rendering. In this paper, we evaluate these trends in programmability of the graphics pipeline and explain how ray tracing can be mapped to graphics hardware. Using our simulator, we analyze ...

**Keywords:** programmable graphics hardware, ray tracing

**4 Color table animation**

Richard G. Shoup

**August 1979 ACM SIGGRAPH Computer Graphics , Proceedings of the 6th annual conference on Computer graphics and interactive techniques, Volume 13 Issue 2**Full text available:  [pdf\(3.40 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Even a small amount of animation can greatly enhance graphic communication—particularly when it is desired to show change, movement, or a complex idea or relationship. In raster scan display systems, however, the cost of providing animation has usually been prohibitively high due to the large bandwidths involved in changing a picture rapidly. This paper describes a simple method for providing a limited but very useful real-time interactive animation capability on many existing frame b ...

**Keywords:** Color table, Computer animation, Computer graphics, Frame buffer, Raster scan**5 Wolves and cubism: Stylized video cubes**

Allison W. Klein, Peter-Pike J. Sloan, Adam Finkelstein, Michael F. Cohen

**July 2002 Proceedings of the 2002 ACM SIGGRAPH/Eurographics symposium on Computer animation**Full text available:  [pdf\(1.56 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#)

We present a new set of non-photorealistic rendering (NPR) tools for processing video. Our approach is to treat the video as a space-time volume of image data. Previous tools to process video for an impressionist effect have painted collections of two-dimensional strokes on each successive frame of video. In contrast, we create a set of "rendering solids." Each rendering solid is a function defined over an interval of time; when evaluated at a particular time within that interval, it provides pa ...

**6 The power and performance of proof animation**

Nancy J. Earle, James O. Henriksen

**December 1995 Proceedings of the 27th conference on Winter simulation**Full text available:  [pdf\(846.29 KB\)](#)Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**7 A visual medium for programmatic control of interactive applications**

Luke S. Zettlemoyer, Robert St. Amant

**May 1999 Proceedings of the SIGCHI conference on Human factors in computing systems: the CHI is the limit**Full text available:  [pdf\(1.15 MB\)](#)Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**Keywords:** agents, demonstrational interfaces, development tools, interaction techniques

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**1** [GRIP: graphics reduced instruction processor](#)


Gautam B. Singh

September 1991 **Proceedings of the 24th annual international symposium on Microarchitecture**Full text available: [pdf\(842.87 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)
**2** [The 8 by 8 display](#)


R. F. Sproull, I. Sutherland, A. Thomson, S. Gupta, C. Minter

January 1983 **ACM Transactions on Graphics (TOG)**, Volume 2 Issue 1Full text available: [pdf\(1.53 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)
**3** [An adaptive subdivision algorithm and parallel architecture for realistic image synthesis](#)


Mark Dippé, John Swensen

January 1984 **ACM SIGGRAPH Computer Graphics , Proceedings of the 11th annual conference on Computer graphics and interactive techniques**, Volume 18 Issue 3Full text available: [pdf\(1.02 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

An algorithm for computing ray traced pictures is presented, which adaptively subdivides scenes into  $S$  subregions, each with roughly uniform load. It can yield speedups of  $O(S^{2/3})$  over the standard algorithm. This algorithm can be mapped onto a parallel architecture consisting of a three dimensional array of computers which operate autonomously. The algorithm and architecture are well matched, so that communi ...

**Keywords:** Adaptive, Parallel, Ray tracing, Subdivision

**4** [The Ray casting engine and Ray representatives](#)


J. L. Ellis, G. Kedem, T. C. Lyerly, D. G. Thielman, R. J. Marisa, J. P. Menon, H. B. Voelcker

May 1991 **Proceedings of the first ACM symposium on Solid modeling foundations and CAD/CAM applications**Full text available: [pdf\(1.68 MB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

5 Student best paper contest: Proscenium: a framework for spatio-temporal video editing 

Eric P. Bennett, Leonard McMillan

November 2003 **Proceedings of the eleventh ACM international conference on Multimedia**Full text available:  pdf(2.86 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We present an approach to video editing where movie sequences are treated as spatio-temporal volumes that can be sheered and warped under user control. This simple capability enables new video editing operations that support complex postproduction modifications, such as object removal and/or changes in camera motion. Our methods do not rely on complicated and error-prone image analysis or computer vision methods. Moreover, they facilitate an editing approach to video that is similar to standard ...

**Keywords:** feature removal, feature selection, multimedia framework, special effects, video editing, video layers, video stabilization

6 Emancipated pixels: real-world graphics in the luminous room 

John Underkoffler, Brygg Ullmer, Hiroshi Ishii

July 1999 **Proceedings of the 26th annual conference on Computer graphics and interactive techniques**Full text available:  pdf(613.18 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** CAD, architectural space, computer vision, luminous-tangible interfaces, projection, real-world graphics

7 Appearance-perserving simplification 

Jonathan Cohen, Marc Olano, Dinesh Manocha

July 1998 **Proceedings of the 25th annual conference on Computer graphics and interactive techniques**Full text available:  pdf(3.66 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** attributes, color, maps, normal, parameterization, simplification, texture

8 Gaze-contingent display using texture mapping and OpenGL: system and applications 

Stavri G. Nikolov, Timothy D. Newman, Dave R. Bull, Nishan C. Canagarajah, Michael G. Jones, Iain D. Gilchrist

March 2004 **Proceedings of the Eye tracking research & applications symposium on Eye tracking research & applications**Full text available:  pdf(685.03 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper describes a novel gaze-contingent display (GCD) using texture mapping and OpenGL. This new system has a number of key features: (a) it is platform independent, i.e. it runs on different computers and under different operating systems; (b) it is eyetracker independent, since it provides an interactive focus+context display that can be easily integrated with any eye-tracker that provides real-time 2-D gaze estimation; (c) it is flexible in that it provides for straightforward modifiati ...

**Keywords:** display, eye-tracking, gaze-contingent, image analysis, image compression,

image fusion, openGL, texture mapping

**9 Reproducing color images using custom inks**

Eric J. Stollnitz, Victor Ostromoukhov, David H. Salesin

July 1998 **Proceedings of the 25th annual conference on Computer graphics and interactive techniques**

Full text available:  [pdf\(217.32 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)



**Keywords:** Kubelka-Munk model, Neugebauer model, color printing, color reproduction, gamut mapping, ink selection, separations

**10 Designing and mining multi-terabyte astronomy archives: the Sloan Digital Sky Survey**

Alexander S. Szalay, Peter Z. Kunszt, Ani Thakar, Jim Gray, Don Slutz, Robert J. Brunner

May 2000 **ACM SIGMOD Record , Proceedings of the 2000 ACM SIGMOD international conference on Management of data**, Volume 29 Issue 2

Full text available:  [pdf\(429.09 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)



The next-generation astronomy digital archives will cover most of the sky at fine resolution in many wavelengths, from X-rays, through ultraviolet, optical, and infrared. The archives will be stored at diverse geographical locations. One of the first of these projects, the Sloan Digital Sky Survey (SDSS) is creating a 5-wavelength catalog over 10,000 square degrees of the sky (see <http://www.sdss.org/>). The 200 million objects in the multi-terabyte database will have mostly numerical attribut ...

**Keywords:** Internet, archive, astronomy, data analysis, data mining, database, scalable

**11 Surface modification tools in a virtual environment interface to a scanning probe microscope**

Mark Finch, Vernon L. Chi, Russell M. Taylor, Mike Falvo, Sean Washburn, Richard Superfine  
April 1995 **Proceedings of the 1995 symposium on Interactive 3D graphics**

Full text available:  [pdf\(3.87 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)



The NanoManipulator system has been expanded from a virtual-reality interface for a specific scanning tunneling microscope to include control of atomic force microscopes. The current state of the system is reviewed, and new tools extending the user's feel and control in manipulation and fabrication in the mesoscopic regime are detailed. Manipulations that could not be performed using the techniques available from commercial SPM systems are demonstrated, and the direction of ongoing research ...

**Keywords:** atomic force microscopy, force, haptic, interactive graphics, scanning tunneling microscopy, scientific visualization, teleoperation, telepresence, virtual worlds

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